

## Algebraic Geometry Seminar

### *Kernels of numerical pushforwards*

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**Abstract:** If  $\pi : X \rightarrow Y$  is a morphism of projective varieties over an algebraically closed field, and  $Z$  is an effective  $k$ -cycle on  $X$ , then  $\pi_* Z = 0$  iff  $Z$  is a combination of subvarieties of  $X$  that are contracted by  $\pi$ . When working not with cycles, but with cycle classes (modulo numerical equivalence), it is natural to ask when can we expect a similar geometric conclusion given the vanishing of a class  $\pi_* \alpha$ . I will present progress on this question, in particular leading to new cases of two conjectures essentially due to Debarre, Jiang, and Voisin. This is joint work with B. Lehmann.

Wednesday, September 24 at 4:00 PM in SEO 427